

In the diagnosis of adherent pericarditis most probably the greatest assistance comes from the recognition of well-defined cardiac decompensation, wherein there are no demonstrable valvular or myocardial changes to account for the decompensation. This should always arouse the suspicion of adherent pericarditis. Likewise a decompensating heart which reveals no abnormal findings relative to its size, shape and position should be investigated thoroughly for adhesions. Most probably if the physical examination as delineated above is conducted carefully, while bearing in mind the possibility of adherent pericardium, very few cases of extensive adhesions will be overlooked. I believe we have been able in some cases, especially when the adhesions obliterate the cardiophrenic angles or become dense in the mediastinum, to decide the diagnosis by means of carefully taken stereographic plates. When the adhesions are mild or moderate and not selectively located the diagnosis most probably is not only impossible but unimportant.

EFFECT OF THERAPEUTIC DOSES OF MERCURY ON THE KIDNEYS AND THE DURATION OF ITS EXCRETION.

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THE renal excretion of the mercurials, following their various methods of internal administration, has been the subject of frequent study in the past. Following their elaboration of a "New and More Delicate Test for the Detection of Mercury," Wile and Elliott were able to add materially to our knowledge of the drug's action, following its use in the form of injection and inunction. It has seemed, therefore, that a similar study of calomel following its internal administration might prove worthy of description. The scope of the experiment, as undertaken at this time, was limited to a calculation of the period of time over which the drug was excreted and a study of its action upon the kidney as determined by urinary findings.

The method for the detection of mercury employed in the experiment, in brief, embodies the use of copper dust in an acid solution of the suspected material. The mercury is taken up to the last trace by the copper dust. The latter is then collected, dried and heated in the distal end of a bulb tube. The mercury is thus vaporized and deposited as an amalgam in a small particle of gold leaf. By this method one-millionth of a grain of mercury in solution can be detected microscopically.

It was interesting to note that in establishing controls for the experiment many patients were found unsuitable for the reason that

they were not mercury-free. Inquiry revealed that the majority of these patients had received previous antisyphilitic treatment, entailing the use of mercury in one of its various forms. In the light of previous studies it is a well-known fact that mercury can be found for years in the urine of patients who have previously received the drug, so this finding was to be expected. Obviously these patients were rejected at once. Controls, finally, were selected from other clinics, each according to the following conditions: (1) Those that gave no history of previous mercurial ingestion must give one negative test for mercury in the urine; (2) if there were a history of previous mercury ingestion or if the patient had ever been exposed to mercurial vapors two successive negative tests over twenty-four-hour specimens were required.

In addition, each specimen of urine was subjected to a complete analysis to ascertain whether it was normal in other respects. Chemical and microscopic tests on a centrifuged specimen were required to be negative. A complete record of all analyses was preserved.

Having thus determined the standards the first application of the test was begun by the internal administration of calomel in the usual way: One-quarter-grain doses over fifteen-minute intervals. The conditions under which the experiment was made were: (1) No drastic saline or other purge should follow the ingestion of the mercury; (2) all specimens must be collected in mercury-free containers at various intervals; (3) only one course of the drug should be given. The various dosages that are most commonly given, therapeutically, were used in the experiment. The urines were then collected at the intervals shown in the tables and were subjected to the test for mercury as described above. The results were carefully tabulated.

**SERIES I.—CALOMEL, GRAINS TWO IN ONE-QUARTER-GRAIN (DIVIDED)
DOSES AT FIFTEEN-MINUTE INTERVALS.**

Patient.	6-hour.	12-hour.	24-hour.	2d day.	3d day.	4th day.	5th day.	6th day.
1 . . .	—	—	X	X	X	X	—	—
2 . . .	—	X	X	X	X	X	Patient left hospital	0
3 . . .	—	—	X	X	X	X		—
4 . . .	—	X	X	X	X	X	X	X
5 . . .	X	X	X	X	X (X)	X (X)	—	—
6 . . .	—	X	X	X	X	X	—	—
7 . . .	—	—	X	X	X	X	—	—
8 . . .	X—	—	X	X	—	—	—	—

SERIES II.—CALOMEL, GRAINS ONE AND A HALF IN ONE-QUARTER-GRAIN (DIVIDED) DOSES AS ABOVE.

Patient.	6-hour.	12-hour.	24-hour.	2d day.	3d day.	4th day.	5th day.	6th day.
1 . . .	—	—	—	X	X	X—	—	—
2 . . .	—	—	X	X	X	X	X	—
3 . . .	—	X	X	X	X (X)	—	—	—
4 . . .	—	—	X	X	X	X	—	—
5 . . .	—	X	X	X	X	—	—	—
6 . . .	X—	X	X	X	—	—	—	—
7 . . .	—	X	X	X	X	—	—	—

SERIES III.—CALOMEL, GRAIN ONE IN ONE-QUARTER-GRAIN DOSES AS ABOVE.

Patient.	6-hour.	12-hour.	24-hour.	2d day.	3d day.	4th day.	5th day.	6th day.
1 . . .	—	X	X	X	X	X	—	—
2 . . .	—	X	X	X	—	—	—	—
3 . . .	—	X—	—	X	—	—	—	—
4 . . .	—	X	X	X	—	—	—	—
5 . . .	—	X—	X	X	—	—	—	—

SERIES IV.—CALOMEL, GRAIN ONE-QUARTER, ONE-QUARTER-GRAIN DOSES.

Patient.	6-hour.	12-hour.	24-hour.	2d day.	3d day.	4th day.	5th day.	6th day.
1 . . .	—	X	X	X	—	—	—	—
2 . . .	—	X	X	X	X	—	—	—
3 . . .	—	X	X	X	X—	—	—	—
4 . . .	—	X	X	X	—	—	—	—

X=Urine showed hyaline casts and trace of albumin.

From these charts it can be seen that:

- 1. All cases showed a positive test for mercury on the second day.
2. There was a greater excretion of the drug on the second day than any other day.
3. The heaviest excretion of mercury was between the forty-second and the seventy-second hours.
4. Mercury was detected in some cases as early as the sixth hour and as late as the sixth day.

In addition to carrying out the method for detecting mercury in infinitesimal amounts in each urine, every specimen was carefully subjected to both chemical and microscopic tests for the presence of material that might suggest kidney changes. In all cases except those marked X the urine analysis was entirely negative. In the instances marked a trace of albumin and a few hyaline casts were found.

CONCLUSIONS. 1. The excretion of calomel in ordinary therapeutic doses begins within six to twelve hours and is continued until the sixth day, depending upon the size of the dose.

2. A small dose of the drug is excreted as rapidly as a larger dose, but over a shorter period of time.

3. In so far as could be determined by the urine analysis the drug is excreted without injurious effects upon the kidney.

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